Analysis of the Agricultural Economic Trends and Conditions in Clark County, Washington

Prepared for Clark County, Washington

By Globalwise, Inc.

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Introduction

This report addresses the agricultural conditions of Clark County, Washington with consideration of the historical perspective, current conditions and future expected conditions. This report provides the Board of County Commissioners and others with objective data and background information to address the issues of agricultural resource lands protection and designation in the context of approving a preferred alternative for the new Comprehensive Growth Management Plan.

Clark County has a long and rich tradition of agriculture. Farmers and agricultural producers have always been very diverse with regard to what they produce and their size and types of operations. Yet this industry sector continues to evolve and change in response to many influences, and it will likely continue to do so in the future. Land use planning is one of the major influences over how much and of what type of agriculture remains in Clark County. Yet there are many, many other factors over which the county has little or no influence that direct this industry toward its future.

Two elements of the comprehensive planning process are considered:

1) Agricultural lands within the expansion areas (Alternatives 2 and 3) as presented in the current Environmental Impact Statement.

2) Agricultural lands in the more rural areas of the county.

Analysis in this report emphasizes the conditions related to the expansion areas of Alternatives 2 and 3. This is a fact-finding report that draws on existing information to the maximum extent possible. One county level data source that is almost universally relied upon for agricultural production data is the U.S. Census of Agriculture (Ag Census). It is certainly not perfect and its validity is often disputed but is official government data and it captures some trends since the census is taken every five years. This report also contains reference to other government data sources and special studies that address relevant topics covered in this report. The observations of local persons who are active as farmers/agricultural producers or who work closely with farmers are also referenced and considered (see Appendix C).

Bruce Prenguber of Globalwise Inc. is the principal author of this report. Globalwise is an agricultural economic consulting company based in Vancouver, Washington. Bruce has studied many aspects of local, regional, national and international agriculture over the past 25 years. He has also analyzed lands in the agricultural zone that are within the Urban Growth Areas (UGAs) of Clark County for their significance for long-term commercial agricultural production. Nick Beleiciks has assisted Globalwise with collection of agricultural data to describe agricultural economic activity and to estimate the economic contributions of agriculture to the county economy.

Historical Conditions

An in depth look at Clark County agriculture from the 1900's to the mid-twentieth century is available from a series of documents authored by the Washington State Department of Agriculture and USDA. All references in this report to conditions in

Clark County agriculture in 1954 or earlier are from these documents unless otherwise noted. [1]

The U.S. Census of Agriculture (Ag Census) is also a primary document used in this report. It is important to remember when reviewing census data in this report that there is no distinction of a "commercial" farm from a "non-commercial" farm: the Ag Census counts a farm if the respondent self reports that they are a farmer, irregardless of the amount of acreage so long as the farm income is actually or normally $1,000 or more per year. It should also be pointed out that some of the newer (and typically smaller scale) types of diversified farms are not in the database of recipients that receive the Ag Census, so their responses are often not included.

Historical Description of the Extent and Location of Farms

In the 1950's there were over 200,000 acres in farms. The 1957 report gives a general description of their location:

> "Most of the county's 219,000 acres in farms are located on the alluvial plains of the Columbia, Lewis and Washougal Rivers; the Salmon and La Camas Creeks and on the sloping terraces above these streams. Terraces and benchlands where the Columbia and other rivers meandered during early geological times are large in area." [2]

A description of land and soils also reveals how USDA considered soils, the general location of farm lands and utilization of the land for agriculture.

> "The land of Clark County is divided into six broad classes of economic land use. Class I and II lands are of high and better –than-average productivity and support the farms with the highest income. This good farming land, however, is limited in area. It includes the silty loams of the Columbia River bank flood plains surrounding Vancouver Lake and the low terraces along the river north of Vancouver. Small areas are found east of La Center and on the drained lake bed of Fargher Lake northeast of Yacolt. Class III and IV lands are about average in productivity and support farms of fair income when prices are good for farm products. This area covers most of the higher terraces and sloping land five to fifteen miles inland from the Columbia River, including the prairies and bottom lands of the Washougal, La Camas, Salmon Creek, East Fork and Cedar Creek Valleys." [3]

The 1957 report also describes the relative importance of Clark County agriculture in terms of production in the rest of Washington to add perspective for the county's contributions in this earlier time.

> "Clark is noted as the leading western Washington orchard growing area and as a county with well-diversified livestock, poultry and field crop type of

[1] Clark County Agriculture Washington, Crop and Livestock Reporting Service Bulletin, published in 1957. The documents are at: http://www.nass.usda.gov/Statistics_by_State/Washington/County_Profiles/clark.asp

[2] Crop and Livestock Reporting Service Bulletin, "Part III – Physical Description", Clark County Agriculture Washington, 1957 page 16.

[3] Ibid. page 19.

agriculture. The pattern of farming is greatly influenced by part-time farming and its proximity to the Portland urban area. In production of plums and prunes, Clark County is second in the state and 32nd in the nation. It also has ranked among the first ten counties of the state in production of cherries, pears, dairy products and turkeys according to recent census. Clark was 21st in the state in value of farm products sold during 1954, with total sales of $8,584,322. Of this sum, $6,068,113 was received by producers for livestock and livestock products, eighth highest in Washington. Income per farm is slightly below the state average mainly because of numerous, small, part-time farms which outnumber the larger commercial farms. While secondary to manufacturing, agriculture has played an important part in the expanding population and economy of Clark County." [4]

A 1972 publication by USDA have a more recent descriptive assessment of agriculture in the county. [5] Following are direct quotes from that report:

- "About 42 percent of the county is cleared and in farmland." (Note: this would total about 168,000 acres).
- "Most of the farmland lies in the central, western and southwestern parts of the county. This area is composed of terraces and terrace plains, about 30 to 800 feet above sea level."
- "In these areas farming is confined to the larger valleys. Much of the cleared land is in hay and pasture."
- "Dairying is the most important farm enterprise in the county; it accounts for more than 40 percent of the value of farm products sold. Other important farm products are vegetables, berries and orchard fruits."

The Land Base of All Farms

The U.S. Census of Agriculture was conducted in either five or 10 year intervals between 1900 and 1954. It shows the number of farms in the county grew steadily from 1,873 farms with 192,700 acres in 1900 to 4,934 farms with 204,850 acres in 1945. Note that the census has always counted all entities in the category of a "farm" so long as there is at least $1,000 of sales.

The peak year for acreage in farms was 1950 when the census reported that almost 220,000 acres were in farms. This was 54.1 percent of the county's total land base. Sizeable amount of woodlands were included in the total acreage estimate along with cropland, pasture and grass fields.

In contrast to the 1950's, the 2002 Ag Census reports that Clark County had 1,596 farms with 70,694 acres.

The historical farm statistics show that Clark County has always been dominated by small farms. However, "small keeps getting smaller". In 1954 it was reported that:

[4] Crop and Livestock Reporting Service Bulletin, "Part I – History of Clark County Agriculture", Clark County Agriculture Washington, 1957, page 1.
[5] See Soil Survey of Clark County, Washington, by Soil Conservation Service, USDA, November 1972, page 1.

"Small farms are characteristic of agriculture in Clark County. Over two thirds of all farms in the county are less than 50 acres in size."

In 2002 the census data shows 80 percent of all farms were less than 50 acres in the county. In 1954 the average size of farms in the county was 51 acres; in 2002 the average size was 44 acres and the median size was 20 acres.

Number of Farms by Income and Acreage

The Census of Agriculture shows a large number of respondents who reported gross sales of less than $2,500 and the numbers have fluctuated widely between 1987 and 2002(see Table 1). The 2002 census shows a 78 percent increase in this category from 1997 to 2002.

Net income is one of the best determinants of what constitutes commercial farm businesses versus non-commercial farmers. Gross sales do not provide a clear indication of commercial farm businesses, but higher level of sales does correlate with on-going business intentions. Table 1 shows the number of farms with sales of $25,000 and over to give an indication of commercial farm trends. Comparison of 1987 to 2002 shows a decrease of 30 farms with sales of $25,000 or more. However the low point was in 1997 at 151 operations, and the number rose to 170 in 2002.

Table 1 - Number of Farms in Clark County: 1987, 1992, 1997 & 2002

Farms by Sales of Products	1987	1992	1997	2002	Percent Change 1997 to 2002
Less Than $2,500	716	596	523	931	+78
$2,500 to $4,999	242	228	215	203	-6
$5,000 to $9,999	196	148	158	157	nil
$10,000 to $24,999	114	130	128	135	+5
$25,000 to $49,999	40	43	51	41	-20
$50,000 to $99,999	35	30	34	35	+3
$100,000 Plus	125	82	66	94	+42
Grand Total	1,468	1,243	1,178	1,596	+35
Total With Sales Over $25,000	200	155	151	170	+13

Source: 1987, 1992, 1997 and 2002 U.S. Census of Agriculture for Clark County, Washington by National Agricultural Statistical Service, U.S. Department of Agriculture.

The census data also shows the amount of land in "all farms" and this is given in Table 2. There has been a major growth in the number of farms in the 1 to 9 acreage class from 1997 when there were 297 farms reported versus 471 in 2002. There was also an increase in the 10 to 49 acre class in the same five year period.

Table 2 - Farms by Size for All Farms in Clark County, 1987, 1992, 1997 & 2002

Size of Farms (Acres)	1987	1992	1997	2002
1 to 9	274	271	297	471
10 to 49	679	610	543	793
50 to 179	367	285	246	264
180 to 499	84	68	70	51
500 to 999	19	15	14	14
1,000 or more	5	8	5	3
Average Farm Size	66	66	62	44

Note: "All farms" are farms reporting sales of $1,000 or more or farms that normally have sales of $1,000 or higher.
Source: 1987, 1992, 1997 and 2002 U.S. Census of Agriculture for Clark County, Washington by National Agricultural Statistical Service, U.S. Department of Agriculture.

Table 3 presents a comparison of the type of crops grown in farms in Clark County in 1997 and 2002. The largest single category of crop produced in 2002 is nursery, greenhouse and floriculture crops at $18.7 million. Ranked second by total sales is milk and milk products at $9.5 million, followed by poultry at $7.0 million, fruit and berries at $5.8 million, cattle and calves at $4.67 million and Christmas trees at1.3 million. All other categories had less than $1.0 million in estimated sales.

Table 3 - Type of Agricultural Products Grown on All Farms in Clark County : 1997 and 2002				
Value of Sales by Commodity/Group	1997		2002	
	Farms	$1,000	Farms	$1,000
Grains, Dry Beans, Dry Peas	NA	NA	17	$184
Vegetables, Melons, Potatoes, Sweet Potatoes	NA	NA	45	$974
Fruits, Tree Nuts & Berries	103	$4,155	117	$5,796
Nursery, Greenhouse, Floriculture, & Sod	NA	NA	140	$18,682
Cut Christmas Trees & Short-Rotation Woody Crops	NA	NA	46	$1,310
Poultry & Eggs	113	$5,983	120	$7,031
Cattle & Calves	838	$5,472	502	$4,718
Milk & Other Dairy Products from Cows	32	$14,231	25	$9,514
Hogs & Pigs	38	$91	49	$71
Sheep, Goats & their Products	NA	NA	105	$253
Horses, Ponies, Mules, Burros, & Donkeys	NA	NA	142	$562
Aquaculture	NA	NA	4	D
Value of Ag Products Sold Directly for Human Consumption	347	$817	290	$769
Value of Certified Organically Produced Commodities	NA	NA	21	$25

Notes: NA = Not Available; D = Not Disclosed
Source: Table 2, 2002 U.S. Census of Agriculture for Clark County, Washington by National Agricultural Statistical Service, U.S. Department of Agriculture.

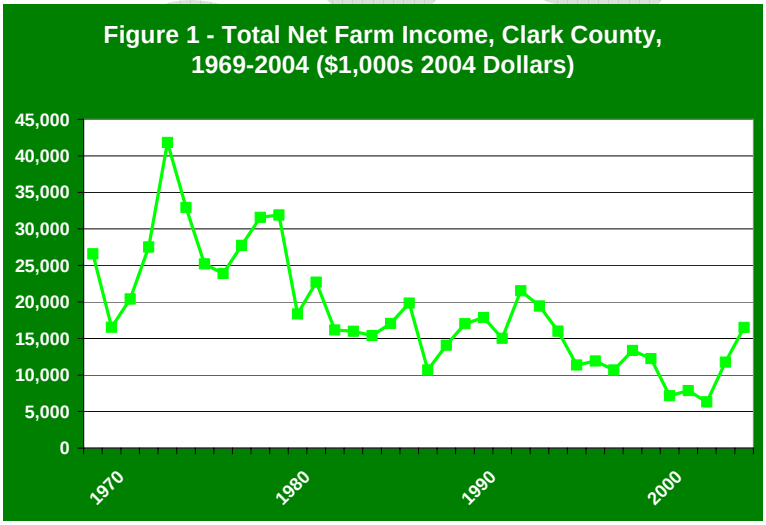
Economic Trends in Clark County Agriculture

The agricultural production sector of Clark County's economy, like the county's economy in general, has undergone many changes in recent years. To understand how Clark County's current agriculture sector compares to the county's historic tradition of agriculture, it is helpful to review the trends of key farm business indicators. Below are historical reviews of farm income and farm employment in Clark County from 1969 to 2004.

Total Net Farm Income

Net farm income is the difference between all farm related earnings and all farm related expenses in a given year. Farm related earnings include cash receipts from the sale of livestock and crops, government farm payments, home consumption of farm products, and rental income from farm machinery. The cash receipts that a farmer receives from livestock and crop sales is largely determined by prices set in the world commodity market, and therefore out of the farmer's control. To the extent that farmers "brand" their products or directly market their products to consumers, they may escape some of the world price competition. However, in aggregate, the farm product markets are primarily driven by highly volatile commodity and wholesale pricing. Farm income changes drastically from year to year. Farm related expenses include livestock, feed and seed purchases, chemical products such as fuel and fertilizer, and farm labor expenses. Farm input prices are also largely out of the farmer's control. Fuel prices are determined on the world market and can change significantly during the course of a growing season, affecting net income. Labor costs are less volatile, but farmers face a steady increase in the cost of hiring workers.

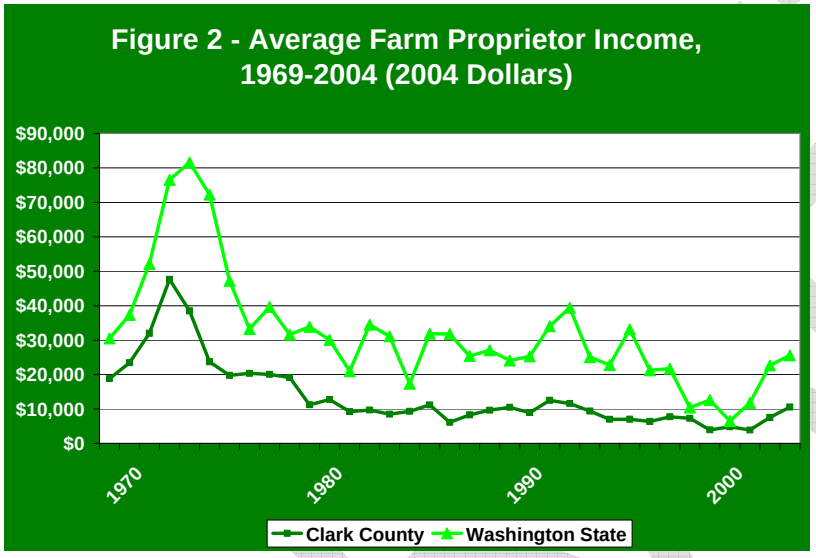
Net farm income in Clark County over the past 35 years reflects the fluctuation in farm commodity output and input prices. Figure 1 shows the inflation adjusted total net farm income for all farms in the county, including sole proprietorships, partnerships, and corporations. The best year for farm income in the county was 1973, when high commodity prices led the county's total net farm income to an adjusted high of $43.8 million. The lowest level of total net farm income occurred in 2002, when declining agricultural acreage and low commodity prices dropped the county's total to $6.3 million. Recent rises in commodity prices and the increase of nursery crop production in Clark County have brought total net farm income up to $16.5 million in 2004, the most current available year of data.



Source: Bureau of Economic Analysis, Regional Economic Information System, Table CA45, and Bureau of Labor Statistics, Inflation Calculator.

Average Farm Proprietor Income

Average farm proprietor income reveals the general level of profit for non-corporate farms in Clark County. Figure 2 shows the inflation adjusted average farm proprietor income from 1969-2004, and compares the county with Washington State's average farm proprietor income. The trends for average farm proprietor income follow closely the total farm income trends in Figure 1. Income was highest in Clark County in 1973 at $47,663 when adjusted for inflation, and farm proprietor income reached its lowest point in 2002 at $3,902. Clark County farm proprietor income has been less than half of Washington State's average in most years. For the most current available year 2004, Clark County's average was $10,563 and Washington State's average was $25,584.

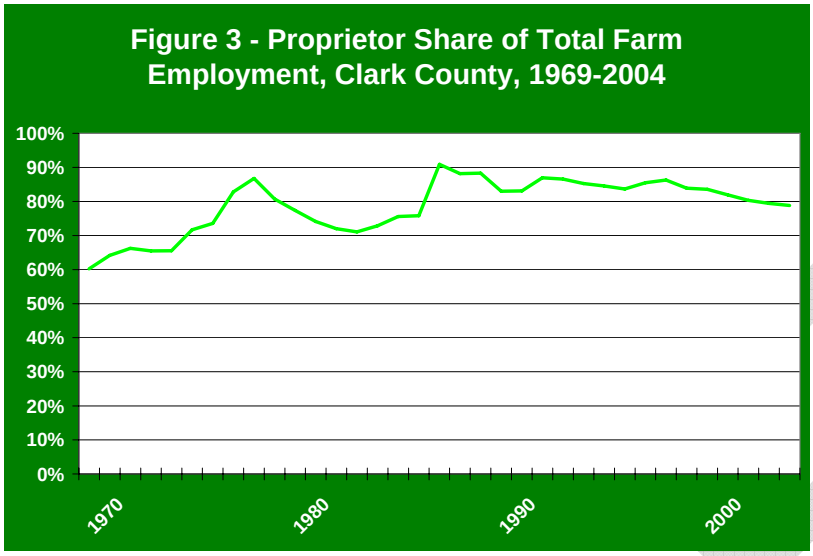


Source: Bureau of Economic Analysis, Regional Economic Information System, Tables CA45 and CA05, and Bureau of Labor Statistics, Inflation Calculator.

Proprietor Employment as Share of Farm Employment

On the county's small farms the main source of labor is most likely the owner operator and family members. Since farm labor expenses are significantly reduced on these types of farm, or they have another off-farm job to rely upon for the majority of the family income. Some producers may be able to continue farming when commercial agriculture is otherwise no longer viable. The percentage of proprietor farm employment suggests what proportion of farms in the county are these types of small farms. A low percentage indicates most farm work is performed by hired workers, which is more characteristic of large or commercial farms. Figure 3 shows partner and sole proprietor farm employment as a percentage of total farm employment in Clark County over the last 35 year. In 1969, these owner operators made up 60 percent of farm employment in the county. Farm proprietor's share of employment increased until 1978 when it reached 87 percent. It dipped through the next decade, but proprietor share of farm employment then reached its all time high of 91 percent in 1987. Proprietor

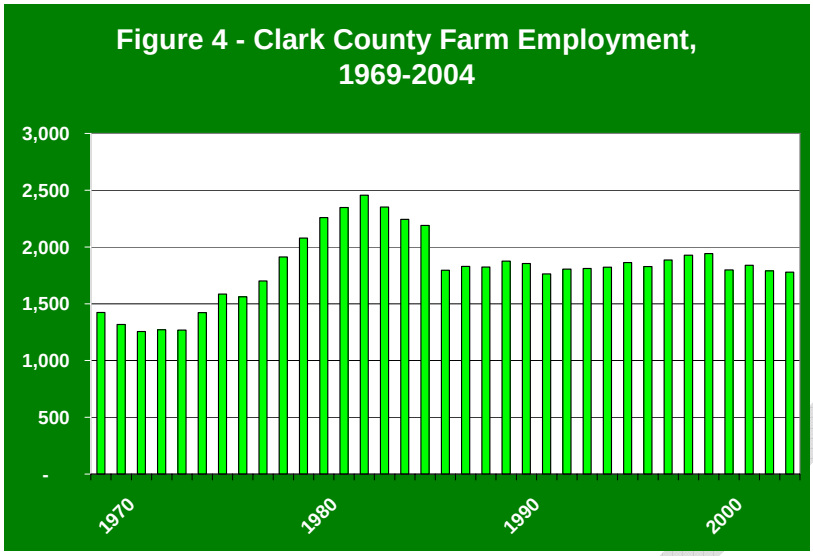
share of farm employment has generally shrunk since then, and was 79 percent during the most current available year of 2004.



Source: Bureau of Economic Analysis, Regional Economic Information System, Table CA25.

Total Farm Employment

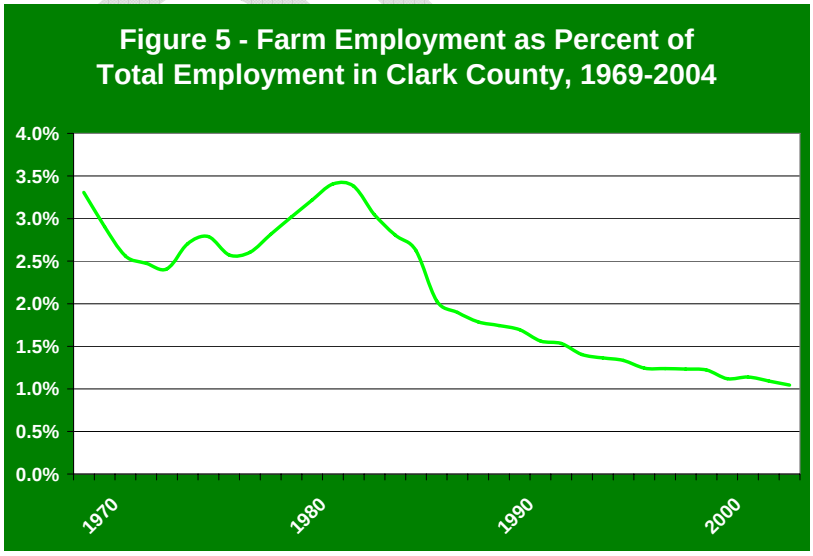
Total farm employment is the number of people who work in the direct production of crops or livestock. Unlike farm income, total farm employment in Clark County does not vary drastically from year to year. Figure 4 shows the total farm employment for all farms in the county, which includes sole proprietors and partners working on their own farms, the workers they hire, and hired laborers working on corporate farms. Farm employment in the county reached its peak in 1983 when there were 2,457 agricultural workers. The lowest level of total net farm income occurred in 1972, when there were 1,255 agricultural employees in the county. Total employment stabilized in 1987 and has since remained near the most current available figure of 1,778 workers in 2004.



Source: Bureau of Economic Analysis, Regional Economic Information System, Table CA25.

Farm Employment as Percent of Total Employment

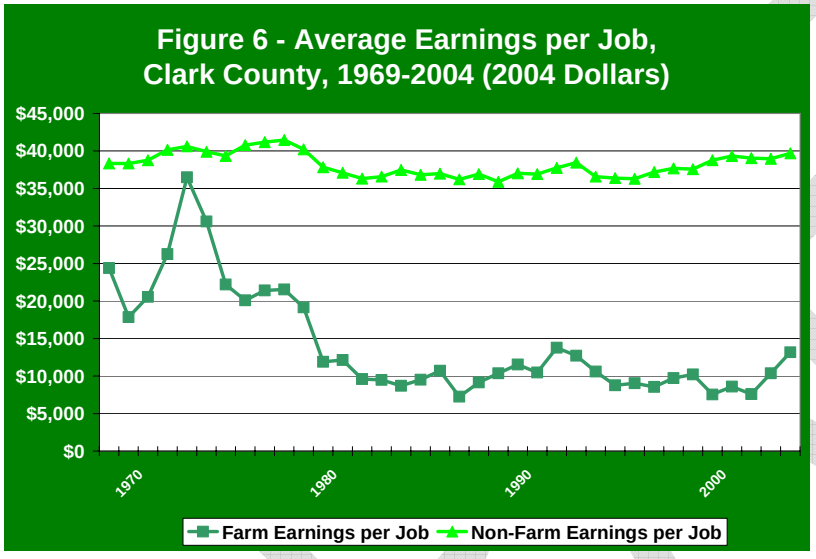
Total farm employment numbers show how many people are directly involved in agriculture. To understand how significant agriculture employment is relative to the size of Clark County's total workforce, farm employment needs to be compared to non-farm employment. Figure 5 shows the percentage of farm employment to total employment in the county over the last 35 years. Farm employment's share of total employment was highest in Clark County at 3.5 percent in 1969 and again in 1982-1983. Agriculture's share of total employment as declined steadily since then, and was 1.0 percent of total employment in 2004, the most current available year. Total employment in Clark County has risen every year since 1983. The steady rise of non-farm employment in comparison to the relatively flat number for farm employment accounts for the declining share of agricultural employment as a share of total county employment.



Source: Bureau of Economic Analysis, Regional Economic Information System, Table CA25.

Average Earnings per Farm Job

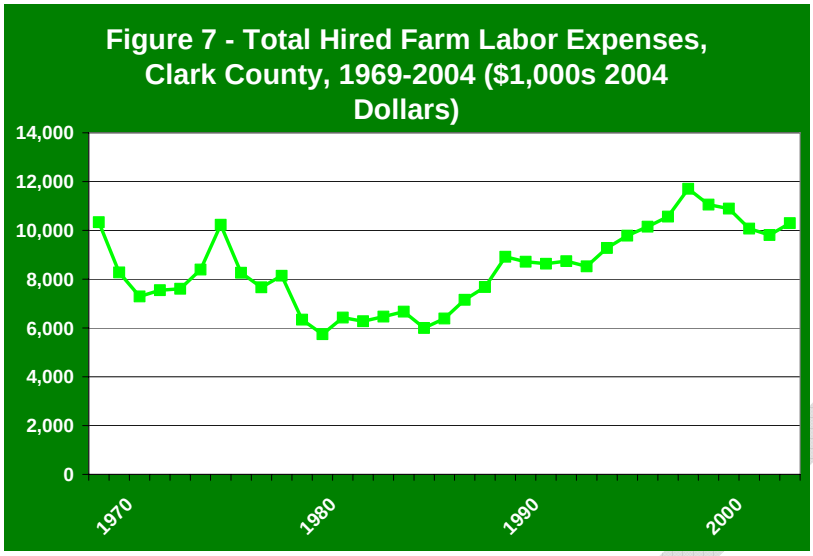
Agricultural jobs tend to be seasonal and many of these jobs pay less per hour than non-agricultural jobs. Consequently the average earnings for farm jobs are lower than other county jobs. Figure 6 compares the inflation adjusted average wage for farm and non-farm jobs in Clark County from 1969-2004. Farm wages were nearly as high as non-farm wages in 1973, but have since declined to well below half of non-farm worker's earnings. In 2004, the most current year, average farm earnings were $13,184, while non-farm earnings were $39,677.



Source: Bureau of Economic Analysis, Regional Economic Information System, Tables CA45 and CA05, and Bureau of Labor Statistics, Inflation Calculator.

Hired Farm Labor Expenses

The cost of hired labor for commercial farms is an important factor in overall profitability. Labor costs will affect whether or not a commercial farm can stay in business, and in which regions new commercial farms choose to locate. Figure 7 shows the inflation adjusted total farm labor expenses (which includes wages, benefits and employers' contributions to Social Security and Medicare) for all farms in Clark County. In 1999, hired labor expenses reached its highest level in the last 35 years at an adjusted $11.703 million. Clark County farms spent the least amount on labor in 1981 when labor expenses were $5.743 million in 2004 dollars. In 2004, the most current available year, Clark County farms spent about $10.295 million on hired farm labor expenses. Although farm labor expenses vary on a yearly basis, farm labor expenses have been generally increasing on an inflation adjusted basis since 1981.



Source: Bureau of Economic Analysis, Regional Economic Information System, Table CA45, and Bureau of Labor Statistics, Inflation Calculator.

Current Conditions in Agriculture

Based on conversations with farmers in the county, it is clear that for many years there has been a loss of the larger traditional commercial farms including dairies, berry farmers, fruit producers, and others. A few sectors have remained fairly constant in terms of total production, such as commercial chicken production, but the number of growers has declined as the most successful or well capitalized farmers have expanded production. One bright spot in Clark County agriculture is the ornamental nursery sector which has experienced growth in recent years. Otherwise "new" agricultural production has primarily occurred among smaller scale farmers who tend to sell more directly to consumers through farm stores, farmers markets or to restaurants. The new small scale agriculture has not made up for the loss of traditional farmers and the total amount of land devoted to commercial agriculture has decreased.

The county level statistics from the Ag Census do not adequately address the new producers. The following is a summary of agricultural conditions based mainly on discussions with local farmers and Extension personnel.

Berries

For many years red raspberries, strawberries, and blueberries have been key crops produced in Clark County. One bellwether crop, raspberries, however is in decline. The Washington Red Raspberry Commission collects mandatory grower assessments which offer a picture of the trend in production of processed raspberries but does not cover the smallest producers of fresh raspberries. [6] Processed raspberries are marketed mainly in frozen whole form or converted to juice and juice concentrate. Their data shows steady attrition in the number of

[6] Growers who produce less than 6,000 pounds of raspberries are exempt from paying assessments and reporting to the Washington Red Raspberry Commission.

producers over the last five years. In 2000 there were 17 producers with 3.13 million pounds of production. The number of producers has steadily declined to 10 producers in 2005 with 2.5 million pounds of production. Washington agricultural statistics for 2004 show the Clark is a distant third in raspberry production after Whatcom and Skagit counties.

Consumer demand of blueberries is very strong and production in Clark County, as elsewhere in the Pacific Northwest, has responded. The state agricultural statistics estimate that in 2004 Clark County harvested 1.5 million pounds on 300 acres. New plantings are in the ground but there is no statistics to estimate the acreage.

Tree Fruits

Clark County was once a leading Italian prune producing county. That ended many years ago. Today tree fruit production is confined to a few farms, most of which do direct marketing. Peaches and apples are probably the main fruit trees left in production. Pear trees have historically been significant with Bartlett pear production for canning. However Clark County's Bartlett trees are nearly all gone as other fruit production areas in the region introduce newer, more popular fresh market varieties. No county level production statistics on tree fruits are available.

Vegetables

There are no statistics or reliable way to estimate the acreage or number of farms that produce vegetables in the county. Most farms that raise vegetables are diversified in the number of crops produced and they vary the mix of crops year – to-year depending on perceived consumer demand. About 10 years ago there were larger farms with several hundred acres devoted to selected vegetable crops. Virtually all of those farms have ceased production. The 2002 Ag Census shows 46 farms with 622 acres producing vegetables. Only About one third of the acreage was indicated as irrigated.

Presently there are a few farms that have perhaps in the range of 10 to 75 acres in vegetable crops. Most or all are selling fresh vegetables by direct market means or selling to other direct marketing retail outlets or farmers markets. Clark County farmers tend to grow the high gross revenue vegetable crops including pumpkins, squash, sweet corn, cucumbers, and tomatoes. Crops such as lettuce, cabbage, carrots and potatoes are grown in very small quantities by the remaining local vegetable farmers.

It should be noted that a small number of farmers who sell vegetables are also diversified and many grow ten or more crops, including berries and fruits. Some have found success by directly selling their own or other farmer's crops through their own farm stores, or at local farmer markets and to restaurants. Farmers who run their own direct retail stores have also branched out to sell value added products such as apple cider, jams, and other foods or ornamental plants. A further source of revenues for some retail farm markets include such agri-tourism attractions as corn mazes, petting zoos, pumpkin launches and hay rides.

Christmas Trees & Ornamental Nursery Plants

Christmas trees are grown in many locations and on a variety of different sized parcels in the county. Generally well drained soils are best but ultimately site selection is dependent on the tree species. Some species grow optimally on higher elevation sites.

Lower prices for Christmas trees in recent years suggest that there are excessive tree plantings in Western Washington because of northwest regional production expansion. As with vegetable growers, if a producer can establish direct retail sales they often gain added profitable margins over the returns realized by wholesale growers. However many growers are producing trees as a side-line enterprise and they do not have a good location for marketing trees. Part time growers also often are disadvantaged by either lack of time or expertise to sell to the public.

Ornamental plant nurseries cover many types of growing operations, from greenhouses to container nurseries to retail garden centers. This has been the more growth oriented side of agriculture in Clark County and it has been propelled in large part by the growth in new housing and the general trend toward home and commercial site beautification. A good resource for showing the diversity and extent of nurseries in the county is found in a publication prepared annually for the membership of the Specialty Nursery Association of Clark County (SNACC). [7] The SNACC membership includes nurseries that sell annual and perennial plants, shade trees, fruit trees, other trees, shrubs, herbs, produce (food plant starts), berry plants, ground covers and more. There are both wholesale and retail nurseries listed. A total of about 20 nurseries in Clark County are listed in their latest guide, and some of the major nurseries in the county are not members of SNACC.

The 2002 Ag Census shows 140 farms within the category of nursery, greenhouse, floriculture, mushrooms sod and vegetable seeds in the county. The census data also shows 1.528 million square feet under glass or other protection and 642 acres in open field production.

Other Specialty Crops

Crops such as ginseng, golden seal and chestnuts are specialty crops produced on relatively few, small-acreage farms in Clark County. However, the successful specialized producers have refined their production techniques and found market outlets that bring them sizeable gross and net income. Strong management skill and production know-how are crucial to their success. However, this market is finite and it is hard to predict the land characteristics and location where future specialty farm operations like these may be established.

Wineries and Wine Grapes

Clark County is home to three wineries that produce wine from grapes grown here. Pinot noir grapes are the main varietal grown in the county. In addition to the three wineries, which all produce grapes, Clark County has approximately three other wine grape growers who sell their grapes to wineries. According to one

[7] See 2006 Specialty Nursery Guide, by the Specialty Nursery Association of Clark County.

winery owner, about 75 acres are devoted to wine grape production. Expansion is proceeding with perhaps 3 to 10 acres being added annually in recent years.

Beef Cattle

The latest Ag Census reports that Clark County had 4,543 beef cattle and calves in 2002. Discussions with some of the livestock operators suggests that there are about 4-5 larger operations that together account for several thousand head. The one large commercial cattle feeding operation known to exist uses very low cost food waste from a local snack food manufacturer. A few herds of 50 to 100 head are also reported. The cattle sector is very restricted within Clark County because there is no low cost public land for grazing and there are no USDA inspected slaughter facilities. [8] Many of the beef cattle in the county are grown non-commercially for personal beef consumption on the small rural properties. Additionally some beef cattle are sold to third parties who then have the animals slaughtered by mobile meat processors. This is a very small scale enterprise because re-sale of the meat is not allowed by law since the processing is not done in a USDA inspected packing plant.

Cow and Goat Dairies

Historically cow dairies were a major part of Clark County agriculture. The county's dairy industry has steadily declined. Dairy farmers in the county indicate that there are seven remaining cow dairies. It is reported by the WSU dairy specialist that in 1984, there were 84 dairies in the county. [9] Dairy operators and former dairy operators state that many reasons exist for the decline. First, the clear trend is for fewer and larger dairies, which have achieved economies of scale. The move to larger dairies also is part of the reason milk prices are low, which pressures the smaller dairies and leads them to expand or leave the industry.

The favored areas for dairy production in the Pacific Northwest are east of the Cascades in eastern Washington, eastern Oregon and in Idaho. Among the reasons for the industry has been re-locating to these areas relative to western Washington are: less costly feed (principally alfalfa hay), lower cost land which allows the diary operators to expand their land base and herd size, better access to labor and workers who are experienced with livestock care and management, and less effort/lower cost to meet manure management standards.

Clark County has at least two Grade A goat dairies, and perhaps more which may or may not be licensed. Goat dairies are more specialized operations than cow dairies.

Horses

A 2004 survey of horse owners was conducted by the Clark County Executive Horse Council (CCEHC). This analysis relied on survey sampling which was used to project the number of horses in the county. The resulting estimate was 35,000 horses in the county with an average of 3.9 horses per horse-owning household. The analysis states that the average number of horses per household has increased

[8] The closest USDA inspected meat packing plant is in Cowlitz County.
[9] Personal communication with Gary Fredericks, WSU Clark County dairy specialist.

slightly from 2000 to 2004, but that the number of horses per household declined significantly in county from 1983 to 2004. The study points to long term population growth (and growth in households) as the reason that horse numbers are growing despite the lower average of horses per household from 1983 to 2004.

The accuracy of the estimation of 35,000 horses is not known, although an estimate of the statistical accuracy is stated in the CCEHC report. The 2002 Census of Agriculture estimates that there were 3,433 horses and ponies on 540 farms in the county. This wide difference is probably partly due to the fact that the Ag Census is sent to persons who are identified as "agricultural producers", not every horse owner. However, the relevant question is not the total number of horses in the county but how many properties with horses can be considered part of commercial agriculture? Owning or renting enough acreage to pasture a few horses in the county is not commercial agriculture.

The horse sector is a source of demand for agricultural crops such as hay or grain. In this regard, the horse sector contributes to agriculture and rural agricultural land use. This also adds a requirement for pasture land for commercial horse operations such as commercial horse breeding operations and for grass hay production.

Poultry and Eggs

Clark County was significant production of fryer chickens. The Washington Fryer Commission reports that Clark County produces 11.45 percent of the state's fryer chickens. [10] This represents an estimated production of 5.2 million birds (the 2002 Ag Census reported 4.37 million chickens). The vast majority of production is accounted for by a few large contract growers. Lewis County dominates state production but Clark and Thurston counties are tied for the second. Fryers are produced in "fryer barns" that take up little land area. Nearly all Washington fryer production is on the west side of the state, near the two major poultry processors.

There are no known major egg producers in Clark County. Some of the small scale diversified farms have laying chickens and sell eggs.

Other Livestock

Commercial production of hogs, sheep, lamas, and alpacas complete most of the livestock grown in Clark County. Most observers believe that these species are either in decline or stable. It is hard to predict that there is any discernible growth in textile use of fibers. There is no tracking of goat production for meat, but there is a sizeable goat population (perhaps over 1,000 head) and it is mainly due to the popularity for goat meat with some ethnic groups. Again, expansion of meat production is limited because Clark County has no USDA approved slaughter facilities.

[10] See www.cluckcluck.org.

What is Commercial Agriculture?

There are wide ranging views about what defines a commercial farmer or agricultural operator. Many of the long time growers in Clark County point to the largest among them that are left in business as "the farmers". Many of the long time farmers also have the view that agriculture is gone or is just about finished here. At the other end of the spectrum, some residents and small farm advocates claim that anyone that produces plants or livestock for sale, regardless of the amount of sales, are farmers.

A more precise concept of who make up the commercial farming industry is important to address for both the long-term land use planning framework of the county and compliance with the GMA. This is also at the crux of the discussion over how to best conserve land for agricultural production. For example if the emphasis is on larger commercial farmers, then larger parcel sizes are generally more important than if the focus is on "all growers". Also ground water availability is a different issue for larger farms than for smaller scale farming.

Defining commercial agricultural operations is also complicated because there are many different types of agricultural operations in the county. One way to establish a definition is to view farmers as those who are able to derive a living from their agricultural business. In this case farming provides a significant source of income although not necessarily the only source of income.

Using the dictionary meaning of commercial agriculture, the concept is clearly rooted in salability, profit and success of farms. This requires more than mere physical production. There is stability and on-going enterprise. These concepts have to do with the ability to produce, sell and earn a financial return that compensates the business owner for the expense and risk of their business. While some do not want to see farming reduced to financial terms, it appears to be the principal way to narrow the scope of commercial agriculture to a concept that allows the county to best identify and plan for land resource protection that will support successful agricultural enterprises in the future.

The concept of a living wage is one measure of the minimum income necessary to support a family and cover its necessary household expenses. These expenses include food, child care, medical, housing, transportation, and other items. The amount of household expenses required varies according to regional cost differences, such as housing costs, and the size of the family. Data for 2004 estimates that the living wage for one adult in Clark County is $16,079 and increases to $42,732 for a family of two adults and two children. [11]

Changing Conditions for Agricultural Production

One fundamental issue from the land use perspective of Clark County agriculture is how changing conditions have impacted the land required by the county's agricultural producers. Some observations are warranted.

[11] The living wage estimates are from the Poverty in America website at www.povertyinamerica.psu.edu.

1) Singular consideration of physical condition, particularly soil, does not indicate the "best" farmland. There is an important interaction between physical and economic factors. For example, the peat soils in Clark County have traditionally been considered as some of the most productive soils. These soils produce excellent quality and yields of cole crops such as cabbage, broccoli and cauliflower. However, the farm gate and retail prices for these vegetable crops are very low and these crops are no longer economically viable to produce in the county. In this case, farmers are not looking to operate land that in a purely physical sense is the most productive.

2) Air drainage and heat units are usually very important factors for determining where the best agricultural lands are located. The highest yields are found on land that receives the most exposure to sunlight and where air moves freely, preventing pockets of colder air from being trapped close to the ground. However, this is not universally true. Some tree species for Christmas tree production do better on somewhat higher elevations in cooler climatic conditions.

3) The level of soil wetness on some former agricultural lands and the location of wet soils are likely to have changed over time due from the drainage of built-up land areas. This may have contributed to important changed conditions for agricultural land use when comparing 1950 conditions to present. This also may render some of the soil survey analyses as inaccurate under present conditions.

4) Soil amendment such as adding organic matter to reduce the clay layer of heavy soil is not practical when large acreages are farmed. However, on small scale farm operations, this is more feasible. As Clark County transitions to smaller farm acreages, this also reduces the singular importance of soils to the decision over where to locate a farm operation.

5) Because land has become so expensive, agricultural producers often rent or lease land, including land adjoining land to their base operations. Beginning farmers have also traditionally rented land to get into business with less capital outlay. However in the current land market finding land to rent or lease is more difficult and this is not satisfactory for establishing long term commercially stable agricultural production.

Review of the Recent Supreme Court Ruling

The Washington Supreme Court recently ruled on Lewis County's procedures to designate agricultural lands for conservation under the GMA. [12] The Court has clearly stated that counties have discretion to designate lands as agricultural land if they follow the requirements of GMA. The court also stated that the designation of agricultural land need not be solely based on the physical character of the land. The Supreme Count has further ruled that agricultural lands are those lands that: 1) are devoted to agriculture, 2) have the capability for production and 3) have long-term commercial significance for agricultural production.

[12] Washington Supreme Court, docket number 76553-7, August 10, 2006.

Of these three requirements, long-term commercial significance for agricultural production is the most difficult criteria to evaluate because this is forward looking and lands that otherwise are agricultural can still be de-designated if they are subject to development pressure or it they have some change in growing capacity or productivity that affects their ability to contribute significantly to agricultural output.

The Supreme Court acknowledges that counties can also use criteria to designate agricultural lands of long-term commercial significance that are based on regulations promulgated by the Washington Department of Community, Trade, and Economic Development. These are the 10 factors CTED has delineated as guidelines for determining the intensity of development pressure on agricultural lands.

The Supreme Court also ruled that counties can use additional criteria beyond any that are specified in the GMA or CTED regulations for designation of agricultural lands as long they are consistent with the intent and requirements of GMA.

In Lewis County's case, they advanced the argument that they were establishing the total acreage of agricultural land for designation based on an "agricultural industry needs assessment". Preparing proper needs assessment that can pass the GMA requires extensive data requirements and this procedure is generally subjective. It is not recommended that Clark County adopt this as a point of analysis to support the total land area for designation. Rather, it is prudent to re-evaluate all of the county lands and apply a consistent set of agricultural land designation criteria to establish which one pass the test of having characteristics of long-term agricultural production capacity.

The original tests for what constitutes agricultural lands as defined in the GMA with the 10 factors delineated by CTED and the latest Supreme Court ruling provide ample guidance for Clark County to establish its own set of agricultural land designation criteria. There appears to be no reason to establish new criteria in Clark County's case. The designation criteria that are recommended below are all related to GMA or CTED criteria.

Criteria for Designation of Agricultural Land in Clark County

Clark County is moving forward to adopt a new Comprehensive Plan with the prospect for expansion of the Urban Growth Boundaries and designation of agricultural lands. The following criteria are proposed for the designation of agricultural land with long-term significance for agricultural production in the county. This set of criteria is designed to meet the intent and purposes of GMA and allow agricultural operations to continue on lands that are physically suited for agricultural production and possess other suitability factors that will allow agricultural operators to continue production in Clark County. This set of criteria is designed so that lands which are already in close proximity to urban areas or otherwise face intensive development pressures are excluded because they do not have the sustained ability to produce significant agricultural production into the future.

The proposed designation of agricultural lands is based on a set of criteria that address many elements of what constitutes commercially viable land for agricultural purposes. For land to be designated as agricultural, it would need to meet at least four of the seven criteria given below. This multiple set of criteria allows for more comprehensive assessment of lands given the diversity of agricultural practices and associated land requirements found in Clark County. Note that the actual numeric parameters to make the final determinations of land suitability are not given; this is left to further consideration by the county.

1) Long-term viable agricultural lands are lands which have steadily been used for agricultural purposes. This is defined to mean that the land has been used for commercial agricultural production with sales of plant or animal products in __ of the last __ years. [13] This usage can be verified by aerial photography available to Clark County.

2) Land is considered to be viable for agriculture if the full market value of agricultural land as assessed by Clark County is no more than __ times greater than the current prices that farmers are willing to pay for land to place it into agricultural use based on property sales analysis as determined by the county.

3) Agricultural land is generally separated from public infrastructure (principally public sanitary or storm water sewer systems). The separation of the agricultural land from these public infrastructure services should be at least __ feet. In addition, it is preferred (but not mandatory) that public water service is at least __ feet from agricultural land.

4) Agricultural land should meet both of the following physical characteristics:

   a) At least __ percent of the soils should be USDA capability class __ or higher without the need for artificial drainage or irrigation.

   b) Hydric soils should make up no more than __ percent of the designated land area. Lands drained by public infrastructure such as ditch or dike systems for the express purpose of maintaining agricultural uses are not considered hydric under this criterion.

5) Agricultural land should be found in groups of parcels where more than __ percent of the area is in agricultural use and the average parcel size is not less than __ acres.

6) Agricultural land should be currently capable of producing a sustained minimum gross income of __ per agricultural ownership for parcels of five acres or more. Parcels of less than five acres must be capable of generating at least $__ per acre. This income criterion is applied by Clark County using expected gross income estimates from the predominant types of farms in the area.

7) Agricultural lands should have evidence of numerous, currently maintained agriculturally-related capital investments/improvements. The number of these investments/improvements should be at least a ratio of __

[13] In the Redmond case, the Court found that land did not have to be used for agriculture to be designated as agricultural land under GMA. However, this is but one factor possible out of seven in making this determination under these criteria.

investments/improvements per agricultural parcel when averaged over the agricultural land area. Clark County shall make this determination and will rely on aerial photography and field verification as necessary. The investments/improvements can include any of the following:

a) Outbuildings and related capital assets in usable condition such as barns, stables, corrals/pens, machine shops, equipment storage sheds, product storage areas, loading areas and farm wholesale or retail stores

b) Irrigation wells and sprinkler or sub-irrigation systems

c) Fencing in well-maintained condition

d) Greenhouses/growing beds

e) On-farm coolers/storage areas, or such facilities that are directly linked to production with the agricultural land area

f) Manure management systems meeting current regulatory standards

g) Permanent agricultural crops including orchards, vineyards, or other perennial crops whose expected useful life exceeds three years are considered as one investment/improvement per agricultural parcel.

h) Any other public or private sector improvements that are in place and enhance the growing capability and productivity of the land.

The Clark County Board of Commissioners may determine not to designate lands as agricultural which otherwise qualify under the above criteria if they find that:

1) Significant incompatibilities will exist between the land under consideration and other lands in the vicinity due to the existing land use designations in the area.

2) Unusual or exceptional urban development opportunity exists for the land under consideration and there is a higher and better use for the land to be designated for the urban development purpose.

Agricultural Land in Clark County

This section reports on the type and location of agricultural land in the county, with particular emphasis on the expansion areas proposed as Alternatives 2 and 3 for the Comprehensive Plan.

The latest Agriculture Census estimates that there was 70,694 acres of land in farms in 2002. This census also estimates that 22,896 acres were in harvested cropland, and 4,752 acres were irrigated. Some people believe only the more intensive farmed land is agricultural while others are inclined to count any agricultural related use in the total.

Using the most recent Clark County current use tax assessment data as a guide gives a very different estimate of the county agricultural land area. The latest estimate from Clark County is that there are 16,569 acres enrolled in either Farm or Agricultural use designation. Note that this estimate includes parcels which have a portion of the land area enrolled in Open Space or Forest or Timber tax designation

as well as Farm and Agricultural, so there is potential for land to be counted as Farm or Agriculture when it is in fact in one of these other classifications.

These differences in tallying agricultural acreage point out why there can be discrepancies in discussions about the amount of agricultural land that is available or used for agricultural purposes. The types of agricultural activity and the definition of what constitutes commercial farming have much to do with determining the size of the land base that exists in the county.

Land in the Expansion Areas that are in the Agriculture Zone at the Current UGA Boundaries

Useful data on the extent of lands that adjoin the current UGAs and are in the expansion areas is given in Table 4. This data shows the amount of land in parcels which are in either Alternative 2 or 3 *and* are in the Ag-20 zone *and* abut the current UGA boundaries.

Table 4 – Characteristics of Land in the Ag-20 Zone and in Expansion Areas that are Adjacent to the Current UGAs

Alternative	No. of Parcels	No. of Parcels with Buildings	Total Acreage	Average Acreage per Parcel
Alternative 2	73	43	1,370	18.7
Alternative 3	16	2	580	36.2

Source: Clark County GIS, October 16, 2006

Agricultural Land in the Expansion Areas

For this analysis, Clark County GIS did photo interpretation of aerial photos taken in 2005. Twelve types of land uses were classified for the land within the Alternative 2 and Alternative 3 areas. Table 5 shows the resulting acreages by type of land use for Alternative 2, and Table 6 shows this data for Alternative 3.

Table 5 - Type of Land Use in the Alternative 2 Expansion Area		
Land Use	**Number of Parcels**	**Acreage**
Brush	9	19.9
Built	274	458.3
Christmas Trees	7	68.2
Cultivation	1	0.9
Forested or Woodland	120	836.9
Golf Course	5	138.2
Hay	116	1,638.8
Nursery	2	6.4
Open Space	80	241.3
Pasture	89	929.5
Perennial Crops	13	165.4
Water/Wetland	1	19.3
Total All Uses	717	4,523.1
Total Ag Uses	228	2,809.2

Note: Perennial crops include orchards, vineyards, or other long term plantings.
Source: Clark County GIS, October 9, 2006.

Table 6 - Type of Land Use in the Alternative 3 Expansion Area		
Land Use	**Number of Parcels**	**Acreage**
Brush	23	85.7
Built	131	177.2
Christmas Trees	2	3.3
Cultivation	0	0
Forested or Woodland	135	659.2
Golf Course	0	0
Hay	88	978.2
Nursery	6	20.5
Open Space	53	149.9
Pasture	79	973.1

Table 6 - Type of Land Use in the Alternative 3 Expansion Area		
Perennial Crops	23	216.9
Water/Wetland	17	71.5
Total All Uses	557	3,355.5
Total Ag Uses	198	2,192.0

Note: Perennial crops include orchards, vineyards, or other long term plantings.
Source: Clark County GIS, October 9, 2006.

Using the 2002 Agricultural Census as a guide, if there was 70,000 acres of agricultural land in Clark County in 2002, currently the county would have approximately 65,000 to 68,000 acres in agricultural use. Using the mid-point of 66,500 acres as the current total agricultural land base, the agricultural land within the expansion areas of Alternative 2 accounts for about 4.0 percent of the county's total agricultural land. Similarly, the Alternative 3 agricultural land area is about 3.3 percent of the county total agricultural land. [14] Note that this is only based on land use calculations; there is no data to determine if in fact these lands are used for commercial agricultural production.

Agricultural Current Use Tax Land in Expansion Areas

Within Alternative 2 expansion areas, there are 108 parcels that are in current use tax designation and have been identified through aerial photos as having agricultural use. These lands have not been studied to determine if they are suitable for commercial agricultural production. One other parcel was planted to Christmas trees. Three parcels were indicated to have cultivation (i.e. the land was plowed or disked for crop planting). Three were primarily wooded but also had agricultural use indicated. Twenty two parcels had pasture as the primary use, 27 had grass hay production as the primary use and 52 others were "fields" whose specific use was not determined from aerial photo interpretation.

Within Alternative 3 expansion areas, there are 74 parcels that are in current use tax designation and appear to have some degree of agricultural use or use potential. Two of the parcels were cultivated and probably were being prepared to plant some type of crops. Nine have primarily wooded cover but also have some agricultural use, 12 are primarily in pasture, 22 are in hay production, and 29 are primarily "fields" with unknown specific agricultural use.

Location of Agricultural Land in Current Use Taxation Relative to Agriculture Zoning

The county's GIS system was used to determine the extent and location of land in Farm and Agricultural land classification and this was compared to the agricultural land zone (Ag-20). There are a total of 956 parcels comprising 16,569 acres in

[14] The agricultural land in the expansion is considered to include land in Christmas trees, cultivation, hay, nursery, pasture and perennial crops.

Clark County's current use program for Farm and Agricultural lands. [15] Approximately 6,700 acres in 328 parcels which are in Farm and Agricultural land classification are also in the Agriculture 20 zone. This represents about 40 percent of the total land in Farm and Agricultural land classification in Clark County. The remaining 60 percent of land in Farm and Agriculture current use is located across other land use zones. The two principal zones which include Farm and Agriculture land are the Rural five acres (R-5) zone and the Rural ten acres (R-10) zone. The R-5 zone has 341 parcels with 3,371 acres of Farm and Agriculture current use land and the R-10 zone has 137 parcels with 2,184 acres of Farm and Agriculture Land. The remaining 173 parcels with 5,377 acres are widely distributed among all of the other land use zones.

Rural Land Identification for Agriculture

The GIS data was used to determine if Clark County had blocks of land that met some basic criteria for agricultural land using a set of selection criteria. All of the following criteria were specified:

- There is at least 200 acres of contiguous lands in Farm and Agricultural Land designation for current use taxation
- At least 25 percent of the soils in the area are in USDA soil class I or II
- The area is at least 1,000 feet from existing public sewer lines

Fifteen land blocks were identified that meet the above criteria and they are widely disbursed in the county. In total these blocks contain 4,750 acres. Of this total, 479 acres (10 percent) from three land blocks are in Alternative 2 expansion area and 687 acres (14 percent) in 3 of the land blocks are within Alternative 3.

Current Contributions of Agriculture to the Economy of Clark County

This section describes the characteristics of Clark County's present agricultural economy, beginning with descriptive data on employment and agricultural businesses. Analysis is then presented for how the removal of all agricultural land by expansion of UGAs under Alternatives 2 and 3 would impact related sectors such as food processing as well as the indirect and induced economic losses that affect the entire local economy. Later in this report analysis is given of changes in the county's agricultural economy from 1994 to 2004 and data is presented for agriculture's contributions relative to the total economy of Clark County.

[15] Parcels are excluded which have compensatory taxes due because the land is coming out of Farm and Agricultural Land classification. Some parcels have several current use land classifications (e.g. Open Space, Farm and Agriculture, or Timber Land) and Designated Forest Land. These parcels with multiple classifications are counted as Farm and Agricultural land even if a portion is in Designated Forest Land. Therefore to a small extent the data presented overstates the amount of land in Farm and Agricultural classification.

Covered Employees and Establishments

The Washington State Employment Security Department tracks the number of agricultural employees that meet unemployment insurance requirements. These 'covered employees' can include workers on corporate farms, regular (steadily employed) workers on small farms and proprietors who choose to pay into the unemployment insurance system. The Employment Security Department also tracks the number of firms reporting to the unemployment insurance system (covered employment), and the annual reported employee earnings (covered earnings). Because many farm proprietors do not opt into the unemployment insurance program and temporary workers do not meet unemployment insurance requirements, Washington State Employment Security Department employment figures under estimate the actual number of agriculture workers in Clark County. However, the covered employment numbers are included to provide a minimal count of the county's agricultural workforce and firms and this gives a reasonable directional trend for employment over time.

Table 7 shows covered employment data for the four-year period 2002 to 2005. In 2005 there were 454 covered employees in agriculture, with 319 working in crop production and 135 working in animal production. The average crop production worker earned $15,263 (up from $11,257 in 2002), while the average animal production worker earned $23,186. The difference in earnings is probably due to the seasonal nature of crop production. In 2005 there were 88 agricultural firms reporting, 64 of which were producing crops (down from 67 in 2002) and 24 were raising animals.

Covered food manufacturing workers are also included in Table 7. There were 29 reporting food manufacturing firms in 2005 with 1,103 employees earning an average of $41,514 annually.

Table 7 – Agricultural and Food Manufacturing, Covered Employment, Average Earnings and Reporting Establishments in Clark County, 2002-2005

	2002	2003	2004	2005
Average Agricultural Employees	**454**	**449**	**460**	**454**
Crop Production	331	333	339	319
Animal Production	123	116	121	135
Average Annual Agricultural Earnings	**$14,430**	**$14,247**	**$15,402**	**$17,619**
Crop Production	$11,257	$11,307	$12,525	$15,263
Animal Production	$22,969	$22,690	$23,465	$23,186
Agricultural Firms Reporting	**91**	**90**	**86**	**88**
Crop Production	67	67	63	64

Table 7 – Agricultural and Food Manufacturing, Covered Employment, Average Earnings and Reporting Establishments in Clark County, 2002-2005				
Animal Production	24	23	23	24
Average Food Manufacturing Employees	**1,150**	**1,183**	**1,140**	**1,103**
Average Annual Food Manufacturing Earnings	**$37,817**	**$37,939**	**$42,277**	**$41,514**
Food Manufacturing Firms Reporting	**29**	**32**	**29**	**29**

Source: Washington State Employment Security Dept., Covered Employment and Wage Series (ES-202).

Community Economic Impacts

In this study an "Impact Analysis for PLANing" (IMPLAN) economic impact analysis model of Clark County is utilized to determine the direct, indirect and induced impacts of the loss of agricultural acreage under Comprehensive Plan Alternatives 2 and 3. See Appendix A for a brief discussion of the impact analysis methodology.

This assessment assumes that all agricultural land inside the growth management area is *completely* removed from production. It also assumes that the diminished production is not replaced elsewhere in the county. Note that this assessment also does not consider resulting economic impacts from future uses of the removed agricultural land. *The additional contributions to the economy of Clark County from the new land uses could be very substantial, especially if significant land area is devoted to industrial uses which bring new jobs.*

Several negative impacts ensue from the loss of agricultural lands that would lead to other economic losses in the county. First, workers on some farmland would lose their jobs and earnings and this would mean their household consumption and expenditures would decrease in the local economy. This leads to direct, indirect and induced losses of jobs and income by others in the county.

A second direct impact results from the reduction in local business purchases by affected farmers. Some local businesses and individuals that rely on purchases from farms would in turn terminate employees and this would ripple through the local economy with further negative impacts.

The value of agricultural output that would be removed under Alternatives 2 and 3 was estimated using two steps. First, Clark County GIS data was used to estimate how many acres of each type of crop would be reduced under each alternative. The acres removed were converted into percentages of that crop's total acreage. The percentage of acreage removed from each crop was then used to estimate the value of removed production, based on the IMPLAN crop output levels. Each crop's

reduced value was then entered in the IMPLAN model. See Table 8 for these reductions.

Table 8 – Estimate Value of Direct Agricultural Output Production Loss in Clark County Under Comp Plan Alternatives 2 & 3, 2006

Agriculture Sector	Alternative 2	Alternative 3
Vegetable & Melon Farming	-$6,120	$0
Fruit & Berry Farming	-$1,036,920	-$1,468,970
Greenhouse & Nursery Farming[1]	-$948,600	-$1,384,960
Hay & Other Crop Farming	-$739,550	-$316,950
Cattle Ranching & Dairy	-$1,084,050	-$1,192,460
Total Direct Loss	**-$3,815,240**	**-$4,363,340**

[1]Greenhouse & Nursery Farming include Christmas tree farms.
Source: IMPLAN model economic analysis

A summary of the total loss to Clark County's economy from the agricultural land losses is presented in Table 9. For both Alternative 2 and Alternative 3 of the Comp Plan, economic impacts are given as direct impacts, indirect and induced impacts, and total impacts. Direct impacts are the value of agricultural production loss stemming directly from the reduction of agricultural acreage assuming each alternative was adopted and brought into the UGAs. Indirect impacts are the losses to businesses that supply goods and services to the agricultural production industry. Induced impacts are losses to businesses resulting from the lost earnings of workers in directly and indirectly affected industries. Therefore induced losses reflect the diminished spending power of employees. Total impacts are the sum of direct, indirect and induced losses.

Each row in Table 9 shows the means through which the county is economically affected. Output is the total production value lost for all industries under the scenarios. Other property income is the loss of corporate profits, and the loss from interest, rents, dividends and other non-labor income sources. Indirect business taxes are excise and sales taxes paid by individuals to business during their everyday transactions. Negative indirect business tax figures indicate a loss of government revenue. Labor income is the earnings and benefits received by employees, including self-employed workers. The employment figure is the loss of full and part-time jobs in the county, including self-employed workers.

Table 9 – Summary of Clark County's Total Economic Impact Due Solely to Loss of Agricultural Acreage Under Comp Plan Alternatives 2 & 3, 2006						
	Comp Plan Alternative 2			Comp Plan Alternative 3		
	Direct Impact	Indirect & Induced	Total Impact	Direct Impact	Indirect & Induced	Total Impact
Output	-$3,815,240	-$1,537,668	-$5,352,908	-$4,363,340	-$1,791,580	-$6,154,920
Other Property Income	-$876,978	-$358,171	-$1,235,149	-$960,159	-$415,239	-$1,375,398
Indirect Business Taxes	-$85,323	-$85,546	-$170,869	-$95,827	-$99,817	-$195,644
Labor Income	-$979,295	-$439,056	-$1,418,351	-$1,229,012	-$518,284	-$1,747,296
Employment	-82	-16	-98	-99	-19	-118

Source: IMPLAN using 2004 Clark County data.

A detailed estimate of the amount of tax revenue lost to the state and county from the loss of agricultural land is presented in Table 10. The total tax revenue lost under Alternative 2 is estimated to be $187,826. Over half of this loss is from sales tax loss (estimated at $95,346) and almost a fourth is from an estimated $42,719 loss of property taxes. The total tax revenue lost under Alternative 3 is estimated to be $215,204. The loss of sales tax revenue is $109,189, and the loss of property tax revenue is $48,975. Again, the reader is reminded that this analysis is not considering the contributions that other land use will add to the county economy. This is merely addressing the losses from the loss of agricultural production if agricultural land is completely removed in the two expansion areas.

Table 10 – Summary of State and Local Tax Impacts Due Solely to Loss of Clark County Agricultural Acreage Under Comp Plan Alternatives 2 & 3, 2006		
State and Local Taxes	Alternative 2	Alternative 3
Sales Taxes	-$95,346	-$109,189
Property Taxes	-$42,719	-$48,975
Unemployment & Workers Comp.	-$760	-$957

Table 10 – Summary of State and Local Tax Impacts Due Solely to Loss of Clark County Agricultural Acreage Under Comp Plan Alternatives 2 & 3, 2006		
Other Taxes	-$11,490	-$13,209
Motor Vehicle License	-$2,515	-$3,012
Fees, Fines and Donations	-$10,941	-$13,071
Dividends	-$24,055	-$26,791
Total State & Local Taxes	**-$187,826**	**-$215,204**

Source: IMPLAN using 2004 Clark County data.

Agriculture and the Clark County Economy – Changes from 1994 to 2004

Agriculture's changing economic relation to the rest of Clark County's economy is best viewed relative to changes happening in the entire county economy. Descriptive IMPLAN models of the county were created for 1994 and 2004 to assess these changes. The resulting aggregated industrial tables are presented in Appendix B, and the following descriptions of Clark County's economy closely follow Tables B-1 and B-2 presented in the Appendix. Dollar figures are in 1994 and 2004 dollars respectively, and have not been adjusted for inflation. These tables were created using different sectoring schemes making direct comparison of individual sectors difficult. A brief explanation of this is given at the bottom of Appendix B.

Agricultural Sector Changes

Clark County grew rapidly in the period from 1994 to 2004, both in population and in the size of its economy. Although population increased nearly 40 percent, the local economy was able to expand to meet the demands of that growth. The county's total industrial output nearly doubled in this period from just over $11 billion in 1994 to nearly $20.3 billion in 2004. Labor income also nearly doubled from $3.6 billion in 1994 to $6.8 billion in 2004. Other value added, which includes corporate and property income as well as taxes, increased from $2.4 billion in 1994 to $11.2 billion in 2004.

The agricultural industry in Clark County has faced tremendous pressure from encroaching development and rising land costs in the last decade. These pressures have lead to an overall loss of farm production. In 1994, Clark County's total agricultural output was nearly $93 million, or 0.8 percent of total county output. By 2004, Clark County's total agricultural output had shrunk to $83.6 million, which by now had become only 0.4 percent of Clark County's total output. Labor income, which includes wages and benefits, declined from about $34 million in 1994 to $21 million in 2004, a decline of 38 percent. Other value added however, which includes corporate profits, property income and indirect business taxes, increased over the same period from $25 million in 1994 to $40.7 million in 2004.

The crop production sector of agriculture was affected the most from agricultural land being taken out of production. Total crop production was $52 million in 1994, and the crop sectors employed an estimated 1,286 people. By 2004, total crop production was less than half that at $20.7 million, and now employed just 380 people. Some of this loss is due to the move of some traditional crop production into the greenhouse and nursery sector, which grew significantly over the decade. The greenhouse and nursery sector, which includes Christmas tree farms, increased output between 1994 and 2004 from about $5.5 million to nearly $19 million. That growth caused an estimated 415 increase in the number of greenhouse and nursery jobs. The growth of greenhouses and nurseries is an example of a growing agricultural sector in Clark County.

The beef and dairy cattle sector data presents an interesting contradiction that is most likely due to changes in the nature of cattle herds in the county. Cattle output fell from $25.6 million in 1994 to $21.6 million in 2004. At the same time, labor income decreased from almost $12 million in 1994 to only $1 million in 2004, yet employment rose from 270 in 1994 to 499 in 2004. The loss of labor income can be attributed mostly to proprietors, who lost 99 percent of their share of labor income between 1994 and 2004. Hired employee earnings in this sector decreased 49 percent over the same time period. The decreased proprietor income coupled with high employment level in the beef and dairy cattle sector suggests that a larger percentage of the county's cattle are being raised on small farms now, instead of in commercial sized herds. A theoretical example of a small cattle farm is a farmer who raises two steers, slaughters one for the household's consumption and sells the other. This farmer is counted as a cattle sector proprietor employee, and yet has little or no income to show for it.

The poultry and egg production sector grew from an output of almost $5 million in 1994 to nearly $15 million in 2004. The sector's employment grew as well, from 32 jobs in 1994 to 82 jobs in 2004. This sector, along with the greenhouse and nursery sector are the only agricultural sectors that have been able to significantly increase their production value over the last decade.

Other animal production increased from almost $2.5 million in 1994 to $4 million in 2004. There were an estimated 127 employees in this sector in 1994 and 307 employees in 2004. Other animal production includes pigs, sheep, goats, llamas, horses, rabbits and any other animal produced in the county. This sector may see growth if niche animal production in the county continues to grow.

The agriculture and forestry services sector is important to note. This sector includes horse stables, another business that may be directly affected by the removal agricultural land. Unfortunately, this sector also includes logging which dominates the sector, so the change in commercial value of horse stables in the county is impossible to separate here. However, the agriculture and forestry services sector is included when reporting the agriculture industry output, employment, labor income and other value added totals.

Another industry that is often considered as part of agriculture's industrial complex is food manufacturing. Clark County's food and beverage manufacturing industry grew at a faster rate than Clark County's economy as a whole between 1994 and 2004. In 1994 the food manufacturing sectors produced $308 million worth of food

and beverages, almost 2.8 percent of the county's entire economy. By 2004 the industry had more than doubled its output to $679 million, or 3.3 percent of the county's economy. Food manufacturing is not included when reporting agricultural industry totals.

Tables 11 and 12 provide more detail about specific Clark County crops and their economic contributions to the county. Table 11 shows detailed crop values for output, employment and labor compensation in 2004, and Table 12 shows the same for 1994. Once again due to changes in industrial classification, not all sectors are directly comparable.

Table 11 – Economic Contributions of Agricultural in Clark County, 2004

Agricultural Sector	Industry Output (1,000s)	Total Employment	Labor Income (1,000s)
Grain Farming	$244	17	$45
Vegetable & Melon Farming	$1,223	19	$382
Fruit & Berry Farming	$8,641	187	$2,315
Hay & Other Crop Farming	$10,565	157	$2,323
Greenhouse & Nursery Production	$18,972	511	$9,728
Cattle Ranching & Dairy	$21,681	499	$1,011
Poultry & Egg Production	$14,767	82	$2,265
All Other Animal Production	$4,039	307	$365
Totals	**$80,132**	**1,779**	**$18,434**

Source: IMPLAN and BEA Regional Economic Information System (Table CA25) using 2004 Clark County data.

Table 12 – Economic Contributions of Agricultural in Clark County, 1994

Agricultural Sector	Industry Output (1,000s)	Total Employment	Labor Income (1,000s)
Food Grains	$123	4	$50
Feed Grains	$454	9	$184
Vegetable & Farming	$4,659	52	$2,084
Tree Nut Farming	$199	3	$87
Fruit & Berry Farming	$41,885	886	$11,673
Miscellaneous Crops	$19	1	$7

Table 12 – Economic Contributions of Agricultural in Clark County, 1994			
Grass Seeds	$168	19	$33
Hay and Pasture	$4,950	312	$1,707
Greenhouse and Nursery Products	$5,469	96	$2,758
Cattle Ranching & Dairy	$25,585	270	$11,910
Poultry & Egg Production	$4,949	32	$1,264
All Other Animal Production	$2,449	127	$931
Totals	**$90,909**	**1,811**	**$32,688**

Source: IMPLAN and BEA Regional Economic Information System (Table CA25) using 1994 Clark County data.

The Food Manufacturing Industry

With the notable exception of a few sectors, the food manufacturing industry in Clark County purchases very little from local agricultural producers. Consequently, local agriculture benefits very little from the presence of the county's larger food manufacturing businesses. This divide between local agricultural production and local food manufacturing has increased over the past ten years.

Tables 13 and 14 show the food manufacturing sectors output for 1994 and 2004. The far right column shows the value of Clark County agriculture that is purchased by the manufacturing sectors. Once again, due to industry reclassification in 2001, the sectors may not be directly comparable.

Table 13 – Local Agricultural Contributions to Food Manufacturing Sectors, Clark County, 2004 (1,000s)		
Food Manufacturing Sector	**Sector Output (Sales)**	**Local Agricultural Inputs Supply**
Fluid milk manufacturing	$55,355	$15,070
Animal, except poultry, slaughtering	$10,474	$3,910
Other snack food manufacturing	$394,778	$2,910
Ice cream and frozen dessert manufacturing	$29,618	$920
Meat processed from carcasses	$8,199	$550
All other food manufacturing	$2,938	$390
Fruit and vegetable canning and drying	$15,496	$340

Table 13 – Local Agricultural Contributions to Food Manufacturing Sectors, Clark County, 2004 (1,000s)		
Wineries	$5,266	$230
Poultry processing	$452	$190
Malt manufacturing	$138,663	$120
Coffee and tea manufacturing	$464	$50
Fats and oils refining and blending	$1,753	$40
Seafood product preparation and packaging	$1,605	$40
Bread and bakery product, except frozen	$9,297	$20
Other animal food manufacturing	$4,547	< $10
Mixes and dough made from purchased flour	$258	< $10
Totals	**$679,163**	**$24,780**

Source: IMPLAN using 2004 Clark County data.

Table 14 – Local Agricultural Contributions to Food Manufacturing Sectors, Clark County, 1994 (1,000s)		
Food Manufacturing Sector	**Sector Output (Sales)**	**Local Agricultural Inputs Supply**
Malt	$61,609	$1,810
Canned Fruits and Vegetables	$21,317	$1,410
Meat Packing Plants	$2,828	$1,100
Potato Chips & Similar Snacks	$170,059	$1,100
Fluid Milk	$24,518	$370
Frozen Fruits, Juices and Vegetables	$915	$80
Wines, Brandy, and Brandy Spirits	$960	$80
Sausages and Other Prepared Meats	$863	$20
Ice Cream and Frozen Desserts	$8,032	$20
Other Prepared Feeds	$2,192	$20
Blended and Prepared Flour	$856	< $10
Bread, Cake, and Related Products	$541	< $10
Cookies and Crackers	$7,541	< $10
Confectionery Products	$380	< $10
Chocolate and Cocoa Products	$1,977	< $10
Animal and Marine Fats and Oils	$693	< $10

Table 14 – Local Agricultural Contributions to Food Manufacturing Sectors, Clark County, 1994 (1,000s)		
Malt Beverages	$2,505	< $10
Other Food Preparations	$376	< $10
Totals	**$308,162**	**$6,010**

Source: IMPLAN using 1994 Clark County data.

The largest purchaser of local farm production in 2004 was the fluid milk industry, which purchased about $15 million worth of raw milk from the dairy sector. This includes the value of raw milk produced at integrated dairies that produce raw milk and bottle it themselves. The animal slaughtering sector was also a large purchaser of local farm production, utilizing $3.9 million worth of local livestock. Custom slaughtering of privately raised livestock is included in this sector in 2004 and listed in Table 13, but is not included in meat packing plants sector in Table 14. Therefore, the value of farm grown livestock slaughtered in the county is underrepresented in the 1994 table. Another food manufacturing sector worth mentioning is canned fruits and vegetables which purchased $1.4 million worth of local farm goods in 1994, but only $340,000 in 2004. Discussions with local farmers reveal that this reduction from lost Clark County fruit production that has been replaced with fruit procured from outside the county.

The dominating manufactured products in both 1994 and 2004 are snack chips and malt. These two sectors are responsible for over 75 percent of Clark County's manufactured food sales. The two main crop inputs needed for these products are processing potatoes and malting barley. Neither of these crops is commercially grown in Clark County. Therefore both of these processing sectors rely heavily on bringing in these raw product ingredients from outside the county. The effect of using imported crops means that, although the snack chip and malt manufacturing businesses are major employers and contributors to the local economy, they do little to directly support the county's agricultural industry.

The Future of Agriculture in Clark County

What appears to lie ahead for agriculture in this county? Since many factors bear on the size and nature of this industry, this is hard to predict. However, some trends are well established and will probably continue in the future. Among the factors that seem most likely to affect local agriculture are:

- Higher land prices for speculation, investment and development due to urbanization create an ever larger gap between the market prices for land and what farmers are willing or able to pay. Higher land prices will also continue to push traditional farmers who have large blocks of land to seek land sales to non-agricultural buyers as the opportunity cost (foregone income) of farming becomes larger. Many full time farmers who want to continue in this business, especially commodity crop growers who sell undifferentiated crops or

livestock/livestock products, will be more likely to sell their land in Clark County and re-establish their operations were there are more favorable economic conditions for long term competitiveness.

- The trend to small scale operations (smaller average farm size) and with agriculture as a "side line" or lifestyle activity will probably continue. Also many farm operations may become more intensive, meaning the emphasis will be on crops or livestock which return more income per acre because Clark County is a high cost area for most growers. There will also be strong economic incentives for farmers to capture more of the total sales margin by further processing their products and/or selling the fresh products directly to consumers.
- It is likely that farmers will either be distinguished by their skills in business and technical knowledge to realize higher then average yields, extra margins due to branding/marketing and gaining customer loyalty, or they benefit from a general trend by local consumers to buy locally specifically because they want to support and sustain local farmers.
- Farmers may decide to remain in the county if they can secure long term leases for land at competitive rates or if local or state government offers some type of agricultural land park/land incentive program. It seems that as the urban area of the county expands further in the traditionally rural parts of the county that buffering the farm land from development will be a key to minimizing future losses of farm operators. However this is some risk for government in that holding land alone is not enough to ensure the land is in fact used to produce agricultural crops or livestock.

Conclusions

Clark County has a long history of producing and processing agricultural crops and livestock. The mix of what is produced is highly diversified. Land conversion to urban uses is one factor that is causing farmers to struggle, but there are many other factors that have reduced the competitiveness of Clark County agriculture.

The rapid urbanization occurring in Clark County makes it imperative to determine what constitutes commercial agriculture in order to guide decisions about protecting agricultural lands for the farmers. Traditional farming with larger acreages devoted to single commodity crops or livestock is in rapid decline, following a long term trend. There are no fundamental reasons to expect that this element of agriculture will recover or prosper in this county. Incidental use of land for "agriculture-like" activity is not commercial agriculture and does not advance the goal of protecting land for agricultural production. In between these ends of the spectrum is small scale, diversified agriculture that does contribute to long term commercially significant agricultural production and does meet GMA requirements. This aspect of agriculture should be the primary focus of Clark County agricultural land use policy.

Appendix A: Description of the Impact Methodology

The impact model used in this study is Impact Analysis for PLANing (IMPLAN). It was first developed by the U.S. Forest Service for land and resource management planning. The IMPLAN system has been in use since 1987 at the University of Minnesota. Its further development has been privatized at the Minnesota IMPLAN Group (MIG). The model of Clark County was specified with IMPLAN Pro Version and uses 1994 and 2004 county IMPLAN data.

The description model is based upon regional economic accounts. The accounts are tables of interactions that describe an economy by the flow of dollars from purchasers to producers within the defined region. The model is predictive in that multipliers define the response of the economy to a change in demand or production. Purchasers for final use (final demand) drive the input-output model. In this case, agriculture sectors are producing goods for final demand, either by local consumers, food manufacturers or export. The agricultural sectors also purchase goods and services from other producers, which also sets off further purchases of goods and services. These indirect purchases (known as indirect effects) continue until leakages from the region—such as imports, profits, or wages—stop the economic transactions within the region. Added to the impact of direct and indirect effects are induced effects. These are the effects of household spending in the regional economy.

This model of Clark County was specified with two modifications of the IMPLAN data provided by MIG. First, the total number of jobs in the agricultural industry was increased to match Clark County employment data from the Bureau of Economic Analysis. The number of jobs was distributed to each agricultural sector according to IMPLAN proportions. This adjustment was necessary because IMPLAN uses national job per output ratios to estimate agricultural employments. The national job-output ratios reflect large-scale commercial agricultural rather than the smaller farm operations that are typical in Clark County, and therefore would underestimate actual employment. The second modification was the increase of the fluid milk manufacturing sector's output, value added and employment figures in the 1994 model. This adjustment was made because that sector's 1994 IMPLAN data did not resemble a typical year for this sector in the early 1990's. No other modifications were made to key relationships such as trade flows, absorption coefficients, production functions or byproduct coefficients in the county data.

The model uses Social Accounting Matrices (SAM) based local relationships. Social accounting allows for consideration of non-industrial transactions such as payments of taxes by business and households. The comparison models are specified with year 1994 and 2004 data. The impact model is specified with 2004 data, which is the latest available, and price deflators are used to bring the impact estimates to 2006 prices.

Appendix B: Clark County Economic Sector Performance for 1994 & 2004

Table B-1 – Clark County Output, Employment, Labor Income and Other Value Added, 2004				
Industry	**Output ($ Millions)**	**Employment**	**Labor Income ($ Millions)**	**Other Value Added ($ Millions)**
Crop Production	20.673	380	5.065	12.227
Greenhouse & Nursery Production	18.972	511	9.728	14.621
Beef & Dairy Cattle	21.681	499	1.011	3.581
Poultry & Egg Production	14.767	82	2.265	7.155
Other Animal Production	4.039	307	0.365	0.640
Agriculture & Forestry Services	3.492	79	2.657	2.459
Forestry, Logging & Mining	108.126	582	29.940	54.632
Utilities	1,236.136	2,213	244.167	918.282
Construction	1,901.697	16,524	798.369	945.421
Manufacturing - Food & Beverages	679.163	1,193	67.820	173.687
Manufacturing - Miscellaneous	1,393.844	5,656	296.320	417.206
Manufacturing - Wood Products	1,624.888	3,576	274.281	468.461
Manufacturing - High Tech. & Related	1,182.322	4,966	277.403	328.199
Wholesale Trade	870.693	5,348	327.189	595.172
Transportation & Warehousing	607.462	5,230	237.046	315.057
Retail Trade	1,148.239	17,229	449.525	742.002
Information	783.970	2,585	172.133	384.666
Finance & Insurance	832.734	3,939	256.533	559.790
Real Estate & Rental & Leasing	1,016.043	6,272	223.250	610.217
Professional, Scientific, & Tech. Services	1,027.755	9,293	572.895	594.621
Administrative & Support Services	577.300	10,311	274.350	347.611
Educational Services	59.342	1,644	25.978	35.308
Health Care & Social Assistance	1,390.168	17,219	752.248	874.060
Arts, Entertainment & Recreation	201.189	3,197	71.552	126.397
Accommodation & Food Services	613.940	12,602	206.243	301.955
Other Services	658.130	10,138	262.332	375.105
Public Administration	1,227.031	20,039	964.597	1,102.010

Table B-1 – Clark County Output, Employment, Labor Income and Other Value Added, 2004				
Special Sectors	1,072.754	0	0.000	870.073
Clark County Totals	**20,296.552**	**161,613**	**6,805.265**	**11,180.613**
Agricultural Totals	**83.624**	**1,858**	**21.091**	**40.683**

Source: IMPLAN using 2004 Clark County data.

Table B-2 – Clark County Output, Employment, Labor Income and Other Value Added, 1994				
Industry	**Output ($ Millions)**	**Employment**	**Labor Income ($ Millions)**	**Other Value Added ($ Millions)**
Crop Production	52.457	1,286	15.826	18.639
Greenhouse & Nursery Products	5.469	96	2.758	1.626
Beef & Dairy Cattle	25.585	270	11.910	3.154
Poultry & Egg Production	4.949	32	1.264	1.398
Other Animal Production	2.449	127	0.930	0.494
Agricultural & Forestry Services	2.041	120	1.311	0.002
Forestry, Logging & Mining	58.614	974	22.757	13.753
Construction	1,161.703	13,766	436.912	225.704
Manufacturing - Food & Beverages	308.161	1,161	48.209	70.887
Manufacturing	3,222.751	18,699	780.897	524.039
Transportation & Communication	693.362	5,127	167.421	137.399
Trade	1,325.624	26,843	559.651	297.071
Finance, Insurance & Real Estate	1,513.785	8,354	146.453	803.036
Services	1,480.837	31,509	775.022	178.284
Government	1,213.790	18,577	631.964	118.411
Other	-6.875	744	5.035	-11.910
Clark County Totals	**11,064.702**	**127,685**	**3,608.321**	**2,381.987**
Agricultural Totals	**92.950**	**1,931**	**33.999**	**25.313**

Source: IMPLAN using 1994 Clark County data.

The figures reported here are in 1994 dollars and 2004 dollars respectively.

An important note needs to be made about industrial classification in Tables B-1 and B-2. The 1994 table is organized using the Standard Industrial Classification (SIC) sectoring scheme. IMPLAN replaced the SIC method of organization with the

North American Industrial Classification System (NAICS) in 2001, and the 2004 data is organized under NAICS. The two classification systems are not directly comparable, which creates a problem when comparing Tables B-1 and B-2. However, every effort has been made to structure the agricultural sectors accordingly in these tables to ease comparisons within the agricultural sectors.

Appendix C: Study Contacts

Dorothy Anderson, Washington Blueberry Commission
Rich Bachert, USDA Natural Resource Conservation Service
Joe Beaudoin, Joe's Place Farm
Henry Bierlink, Washington Red Raspberry Commission
Charles Brun, WSU Clark County Extension
Laurie Conway, Conway Farm
Amy Cziske, Washington Cattlemen's Association
Gary Fredericks, WSU Clark County Extension
Steve Frice, Frice's Berry Farm & Country Store
Merrill Firestone, Firestone Farms
Jack Giesy, Veterinarian
Erin Harwood, WSU Clark County Extension
Walt Hauser, Bethany Vineyards
Jinger Jacobson, Washougal Farmers Market
Carol Miles, SW Washington Research & Extension Unit, WSU
Tom Peerbolt, Peerbolt Crop Management
Robert Ray, Vancouver Farmers Market
Neal Schoen, Schoen Farm
Terri Smykowski, Clark County Saddle Club
Doug Steinbarger, WSU Clark County Extension
Sue Svendsen, Clark County Executive Horse Council
Blair Wolfley, WSU Southwest Washington Research & Extension Unit
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Bill Zimmerman, Bi-Zi Farms